



MEMBER ASSOCIATION OF



NEWSLETTER
MARCH, 1984

Federal President's Column

One of our members, Meritus Professor and Past President of A.S.D.C., Max Horsnell, was named an 'Officer' of the Order of Australia (AO), in the 1984 Australia Day Honours List.

Since Max arrived in Adelaide in 1959, when he was faced with many serious problems, he has shown a steadfast dedication to the advancement of Dentistry - in its broadest sense - within the University, in the A.D.A., and in the community.

I am sure every member of our Society, and in fact all those who know Max, would wish to join me in congratulating him on this marvellous Award.

In this Newsletter I wish to comment on 'the invitation of overseas lecturers to Australia, and the possibility of cost-sharing by our State Branches'.

A recent event illustrated the need for active communication between our State branches. It was by chance that the W.A. Group became aware of the impending visit of Dr. Spiro Chaconas, Chairman of Orthodontics at U.C.L.A., to Melbourne University, where he is to give two two-day courses on Orthodontics. One of these courses is currently topical, namely 'Limited Tooth Movements in General Practice for Adults and Children'. Our Group contacted Melbourne and we are happy to report that Dr. Chaconas is now visiting Perth following his Melbourne visit. Incidentally, this was made

possible by the interest shown by our local practitioners.

I am not advocating competition with the Federal A.D.A. lecturers, however it is important to realise that A.D.A. lecturers offer specific programmes, not necessarily of interest to all speciality groups.

What I am interested in is the combined backing of our resources in enticing a lecturer to Australia who is prepared to visit at least three States. Under these circumstances, costs could be shared realistically. This would permit the A.S.D.C. (and other Societies) to promote 'continuing education' for our members, and the profession generally.

Clearly this type of scheme would require co-ordination and who better than A.S.D.C.'s Federal Secretary to be the focal point of communications - with plenty of forewarning - from any Branch with any suggestion(s).

I would be interested to have the views of members regarding this matter, and I think it is important enough to be discussed 'in principle' at our forthcoming Federal Meeting in Sydney.

Don't forget the A.S.D.C. Biennial Convention, in October - hope to see you there.

Des Kailis.

Federal Secretary's Report.

Probably you all have received your brochures about the 10th I.A.D.C. Congress in Costa Rica. Applications are invited from members to be Principal and Alternate delegates of A.S.D.C. to the Congress. Applications should be forwarded to me through the Branch Secretary.

Correspondence has commenced with the Journals of Pedodontics and Pediatric Dentistry regarding the possibility of a bulk subscription.

State Secretaries are being canvassed for submissions to the Inquiry into the future of dental practice in Australia.

The Biennial Convention of A.S.D.C. will be held in Sydney - at the Opera House - on Thursday and Friday 18 & 19 October, 1984. Federal Council will meet on Wednesday 17th and Saturday 20th October.

John Brownbill

NOTES from THE BRANCHES.

W.A.Branch

The Branch will commence its 1984 year with quite a flourish. The branch has been able to arrange for Dr. Spiros Chaconas to augment his trip (from Los Angeles to Melbourne) across the Nullarbor to present a two day course at the Ansett-Gateway Hotel in Perth. The topic will be 'Limited Tooth Movements in General Practice for Children and Adults'.

The branch owes thanks to our Federal President, Des Kailis, whose efforts have made the Course possible. To this date he has been rewarded by a satisfactory response from the profession. As contact with the profession was difficult over the Christmas Holiday period, there were some anxious moments.

At this stage, details of the other meetings for the year have yet to be finally confirmed.

Alistair Devlin

Queensland Branch

The Branch had its last meeting on February 6th, as usual at the Dental School.

The meeting was addressed by new member, Dr. Geoff Grundy, who is the Principal Dental Officer Training, with the School Dental Service in Queensland. Geoff's very interesting talk on "Cystic Lesions in association with Pulp Therapy in Deciduous Molars" was well received by those attending. Dr. Grundy made the following points:

1. The radiographic appearance of these lesions varies. In some cases there is expansion of cortical bone; in others displacement of the permanent successor is the predominant feature; while in other cases, the clinical and radiographic appearance is that of a chronic abscess.

However, not all radiolucencies associated with pulp treated teeth are necessarily cystic in nature.

2. The composition of the material used in the pulp therapy may not be critical. Formo-cresol, Kri paste, Caustinerf and Beechwood Creosote have all been implicated. The only common ingredient is a Phenol grouping.

3. The cysts seem to occur most frequently in the mandible.

4. The cysts occur more frequently in teeth which were non-vital at the time of treatment.

5. Surgical removal of some lesions has been necessary. However a number of cases have resolved following the extraction of the deciduous molar.

6. Pulp treated deciduous molars should be assessed radiographically within twelve (12) months of treatment. Where radiolucency is evident, appropriate treatment should be instituted.

Some interesting incidents of practice were also presented - Dr. Carmel Junner showed a case of, probably, Concrescence. It concerned a case of an 18 month old child where on each side of the maxillary arch the deciduous central was joined to a supernumerary.

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Queensland Branch continued

Dr. Anne Symons showed two cases; the first involved a case of Trauma resulting in Root Fracture. The treatment of this case involved orthodontic Extrusion of the root, the second showed a case of Uni-lateral enamel loss in a pre-school child, the cause of which it was difficult to ascertain.

Plans for the Annual Clinic Weekend were discussed. This will be held at Toowoomba, October 21 and 22. The Guest Lecturer will be Dr. Roger Hall of Melbourne's Royal Childrens' Hospital.

The next meeting will be held on Monday April 2nd, when Dr. T. McEniery will talk on "Trends in Caries Rates ... the What, Why, and When of the Reduction.

Bill Whittle

Tasmanian Branch

Our membership is slowly climbing and we now have 10% of A.D.A. members in A.S.D.C.

On Saturday, 26th February, a meeting was held at 58 Gascoyne Street, Launceston at which most members were present. Following the meeting members and their partners dined at a new Indonesian Restaurant in Launceston.

It is proposed to hold three further meetings during the year, June, September and December.

The President of the Branch is Dr. Denis Badger, the Secretary/Treasurer is Dr. Felix Goldschmeid. Council member is Dr. Paul Crowe.

It was decided unanimously that membership of A.S.D.C. Tasmanian Branch should be restricted to dentists with a positive interest in Childrens Dentistry and thus no active drive for membership would be initiated among dentists in Tasmania.

Felix Goldschmeid

S.A. Branch

Our Branch committee has been busy making the final arrangements for the 3rd S.A. Country Convention to be held at Hazelmere Estate in McLaren Vale on March 9th, 10th and 11th, and although current registrations are lower than anticipated, we are sure to have a good time, as the programme is varied and interesting, and the venue designed for enjoyment.

Programmes for the future meetings during 1984 have been arranged. One of these meetings is to be a "Clinical Forum" at the Adelaide Childrens' Hospital somewhat similar to the one which was organised at the Princess Margaret Hospital last year, by the W.A. Branch.

The first Branch meeting for this year has been delayed because of the Country Convention, it will be held at the Childrens' Hospital. Dr. Tom Wilkinson will discuss "Temporo-Mandibular Joint problems in Adolescents and Children". The branch has tried to sample a variety of venues for our meetings, and this year will use the facilities available at the Childrens' Hospital for one or two of our meetings.

The academic programme for the year appears to be well in hand. Clinically, there is one area of childrens' dentistry which is not under control, nor appears to be improving - this is the incidence of "Nursing Bottle Caries in babies and pre-school children. Much research has been done on this problem, so let us hope that soon we will witness an actual reduction in cases presenting clinically.

Vita Luks

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N.S.W. Branch

Our first Branch meeting this year will be on March 20th when the Guest Speaker will be Mr. Bayham, Deputy Headmaster of the Special School for Multi Handicapped Blind Children, North Rock. It will be interesting to learn of the problems which present and of the Teaching Techniques which have been developed to deal with these.

Most of our energies in the past months have been directed to arranging the programme and other aspects of the Biennial Convention of the Society to be held in Sydney, at the Opera House, on Thursday and Friday, 18th and 19th October.

The Lecture programme is coming along very well; the Main Speaker will be Professor Stephen Wei, Professor and Chairman of the Section of Pedodontics, Vice Chairman Department of Growth & Development, School of Dentistry, University of California, San Francisco. Other speakers are, Dr. P.J. Gregory, presently Senior Registrar in Paediatric Dentistry, Princess Margaret Hospital for Children, Perth; Dr. P.J.W. Verco, Paedodontist in Private Practice in Adelaide and part-time tutor in the Dental School; and Dr. J.P. Brown, Senior Lecturer in Dentistry for Children, University of Queensland, and affiliated with the Royal Children's Hospital and several centres for disabled children in Brisbane.

Alain Middleton

Victorian Branch

The Branch is expecting to have a very eventful 1984. Four Dinner meetings have been organised for the year and an Annual Clinical Day set for September.

Our first Dinner meeting, held on February 23rd was attended by 39 members and guests. The Speaker, Merideth Kefford gave a very well presented summary relating to the Collingwood Dental Health Education Project. This project demonstrated that dental health education and treatment could be successfully integrated into a comprehensive programme at Secondary School level. A pilot programme significantly improved the students' observed oral hygiene, dental condition, attitudes towards dentists and dental care, and stated behaviour in regard to prevention of dental disease.

For success the programme depended on both education and treatment being easily available in a suitable and non-threatening context. It was felt that a Community Health Centre was the ideal co-ordinating body for a project such as this as it was accountable to the community, able to provide a community health perspective and links with other health workers and programmes.

The Talk was followed by an extensive question and answer session.

Our next meeting will be on April 12, when Dr. Augusta del Rio, Registrar at the Royal Dental Hospital, Children's Department will be the Speaker.

Michael Morgan

ANAESTHESIA & SEDATION - Complications and Emergencies

SPECIAL PROBLEMS in CHILDREN

A Summary of a Paper read before the N.S.W. Branch by Dr. Kevin Yee. **

INTRODUCTION

Complications and emergencies will arise in children who receive sedation and anaesthesia in dentistry unless the attending dentist and anaesthetist exercise extreme care and vigilance during the procedure. This team should be well trained in caring for the paediatric patient as they cannot simply be treated as little adults. Complications and emergencies will arise if warning signs are not recognised early, and acted upon to correct the primary cause.

Oral and intramuscular premedication, and nitrous oxide sedation techniques can be employed with safety, but I strongly discourage the use of intravenous techniques for sedating the dental patient in this age group. It is preferable to use general anaesthesia rather than the latter.

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The most important aspect of dental anaesthesia and sedation is control of the airway. I strongly recommend endotracheal anaesthesia for all general anaesthetic cases, unless the risks for such a technique outweigh that of a non-endotracheal anaesthetic. This, of course, should be carried out by a Specialist Anaesthetist.

WHAT ARE SOME OF THE PROBLEMS WHEN DEALING WITH CHILDREN?

1. Clear pre and post-operative instructions must be given to the patient/guardian of the child who must be closely supervised. I emphasise that any patient receiving sedation or anaesthesia must have fasted for an appropriate period preoperatively. Adults may fast for longer than six hours, but children must be given clear fluids (juice or cordial) at least 4 to 6 hours preoperatively depending on the age group.
2. Hypoglycemia is a special problem in children, probably due to their high basal metabolic rate, and relative low glycogen and fat stores. This may be further complicated by children with poor nutritional status. Hypoglycemia may be asymptomatic, or may be manifested by such symptoms and signs as tremor and sweating, hypotonia, apathy, hypothermia, and convulsions and coma. Management will consist of immediate correction with high concentration dextrose by any route. The planned procedure may need to be postponed.
3. Hypothermia is another problem related to anaesthesia and sedation in children. Their surface area to weight ratio is larger, the insulating capacity of the subcutaneous tissues is less than in adults. Heat loss can be via conduction (a cold dental chair), convection (being positioned near a cold draughty window) radiation (low environmental temperature) or evaporation (breathing high flows of dry gases). Hypothermia leads to higher oxygen consumption, using up normal oxygen reserves. The effects of many anaesthetic agents are prolonged in hypothermia. The management of this problem in the dental surgery is based on awareness and prevention.
4. Children have a reduced respiratory reserve as compared to adults. Once again, the higher basal metabolic rate increases oxygen consumption. Alveolar ventilation is higher than in the adult. Despite the fact that the dead space/tidal volume (VD/VT) ratio is the same, a higher proportion of the minute volume is wasted because of the more rapid rate of respiration. The closing volume is higher in children, and during normal tidal breathing, may exceed the functional residual capacity. As a result, airway closure occurs during part of the respiratory cycle. All these factors lead to a diminished safety margin in children, increasing their tendency towards hypoxia. Changes in inspired oxygen increasing their tendency towards hypoxia. Changes in concentration will affect arterial oxygen, tension more rapidly than in the adult. This is of particular importance during nitrous oxide sedation and intravenous techniques that can cause respiratory depression and/or obstruction.
5. There are certain technical problems that may cause special difficulties in the paediatric patient e.g. - smaller veins, and a variable thickness of subcutaneous tissue making intravenous access more difficult - particularly if they are not co-operating.
 - children have proportionally larger sized heads which can be difficult to stabilise.
 - anatomical differences in the airway may all contribute to difficulties in its management. I refer to the large tongue, anteriorly placed larynx, floppy epiglottis, and narrow cricoid ring.
 - children do not fit properly into a dental chair contoured for adults.
6. Some psychological aspects deserve consideration. With good dentist/child rapport, anxiety can be reduced when previous experiences of dental treatment and the planned procedure are explained, and maternal and cultural anxiety toward dental treatment identified. In this way, pharmacological aid and invasive techniques may not be necessary. If they are, then we must consider another list of problems. A life-threatening emergency may occur during

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induction, maintenance or recovery from general anaesthesia and intravenous sedation techniques. Emergencies may be averted by being aware of potential problems, monitoring relevant parameters, and then acting on the information gained.

1. Cyanosis is an important sign that all is NOT well with the patient. Peripheral cyanosis occurs commonly in infants during anaesthesia and recovery. Peripheral pooling causes such cyanosis, especially in association with hypothermia, hypovolaemia, dehydration, acidosis and polycythemia. It is essential that the cause of cyanosis be rapidly established, and appropriate management undertaken. A particularly dangerous situation occurs when central cyanosis is mistakenly interpreted as peripheral cyanosis with consequent inappropriate management. Central cyanosis indicates a respiratory problem - the most common cause being failure to ventilate the patient's lungs with enough oxygen.
2. Persistent hypoxia can lead to cardiac arrest. The underlying principle in the management of this emergency at any stage is to deliver oxygenated blood to the brain. The widely accepted routine is applicable to all ages:-
 - (i) Airway - clear it
 - (ii) Breathing - start it
 - (iii) Circulation - restore it

When cardiac arrest is suspected during anaesthesia or sedation, discontinue anaesthetic agents and ventilate with 100% oxygen. Air or expired air may be used if oxygen is not available. External cardiac massage should be performed appropriately for the size and age of the patient. The back should be firmly supported and pressure applied in the middle of the sternum at a rate of 60-100 beats/min.

For infants - one or two fingers of one hand can be used to depress the sternum approximately 1 inch. Alternately, the thumb can compress the sternum with the other fingers supporting the back. In older infants and younger children, the heel of one hand can be used. In larger children, two hands are used as in adults.

The efficacy of the compression should be monitored from the appearance of the child and by attempting to feel for the carotid pulse. ECM should be co-ordinated with ventilation of the lungs with a 5:1 ratio. Once emergency treatment has provided for a supply of oxygenated blood to the brain, then definitive management can commence.

Consider: - intubation
- intravenous access
- drugs: for asystole, adrenaline

in a concentration of 1:10,000 is used. 1-2 ml to older infants, up to 5 mls for larger children. If there is no response, then 2 mmols/kg of sodium bicarbonate solution is administered to restore the sensitivity of the myocardium to catecholamines. The response may have been depressed by the rapidly developing non-respiratory acidosis. If bicarbonate and adrenaline do not restore cardiac action, a further dose of each should be given after a few minutes.

-Monitoring: connect ECG if available so as the arrhythmia could be recognised. Cardiac arrest in infants and young children is usually associated with asystole, unlike adults. If ventricular fibrillation does occur, it frequently reverts to sinus rhythm with adequate resuscitation.

-Defibrillation with 2 joules/kg is adequate.

3. Arrhythmias: In small children, bradycardia is a common response to hypoxia and overdosage with drugs such as halothane or suxamethonium. It may occur reflexly, particularly during manipulation of the eyeball, tonsillar and pharyngeal areas. This is due to the increased parasympathetic tone in young children, and to manipulation of organs richly innervated with

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parasympathetic fibres. While it is sometimes necessary to administer atropine to prevent severe bradycardia, it is equally important to identify the cause, to ensure that it is not hypoxia or obstruction. If it is, then it is better to treat the cause rather than to mask the symptoms with atropine.

Sinus tachycardia is common in anaesthetised children, particularly infants, and may be difficult to distinguish from tachycardia due to surgical stimulation during light anaesthesia.

4. Severe laryngospasm seems to be a more frequent complication of anaesthesia and sedation in children under 7 years of age. A partially obstructed airway, the presence of secretions or debris in the pharynx or surgical stimulation during light anaesthesia are common precipitating factors. URTI may predispose patients to laryngospasm. This is managed by:-

- Maintaining a clear pharyngeal airway
- Administering 100% oxygen by mask
- Applying positive pressure to the airway

The administration of suxamethonium to a severely hypoxic child may worsen the bradycardia and lead to cardiac arrest.

CONCLUSION

The short list of problems that I have presented indicates the need for special knowledge, skills and equipment where the operator and the anaesthetist are to utilise anaesthesia and sedation in the treatment of young children. Skilled assistance is invaluable.

A resuscitator device for inflating the patients lungs should be available, and in a range of sizes to fit the young patients. Suction capable of clearing the airway of vomitus and secretion is essential. Oxygen is an invaluable supplement. All these must be available both in the treatment and recovery areas.

** Dr. Kevin Yee, M.B. B.S. (SYD) F.F.A.R.A.C.A., Staff Anaesthetist,
Westmead Centre, Westmead.

Letters to the Editor

Dear Sir,

I wish to write as an individual member of the Society concerning the voting rights of the Immediate Past President.

Proposed Constitutional Change

The following motion is on notice for the next general meeting of A.S.D.C.
"That the Immediate Past President not have a vote on the Council of A.S.D.C.".

I oppose this motion. The only reason for such a motion seems to be to circumvent the possibility of one state having two votes whilst each other state only has one vote; in these enlightened days surely such interstate jealousy has no place in our Society.

It must be remembered that the Immediate Past President is the person who has just led the A.S.D.C. for a term, and had the confidence of council when so elected. Naturally such a person is of high esteem in A.S.D.C. and has served the Society honourably and well. Wisely, the ex-president is retained on council for a further term.

The experience of the I.P.P. has always been invaluable; and it is somewhat insulting to ask the I.P.P. to continue to serve without allowing the I.P.P. a vote. Federal Council has historically worked on a consensus basis; and has not often needed to resort to a vote on issues.

At the next general meeting I urge the membership to vote against the motion on notice, and maintain the present system which works well.

Signed John W. Brownbill.

UNUSUAL INITIAL MANIFESTATION OF ACUTE LEUKAEMIA IN A CHILD.

The duration of symptoms attributable to acute leukaemia in children may vary from only a few days to as long as 6 months, with a medium duration of 4-6 weeks. The earliest symptoms usually fail to arouse suspicion and include anorexia, malaise, fatigue, lassitude and irritability; somewhat later fever, pallor, pain in the limbs and haemorrhage may occur. The commonest signs are enlargement of the lymph nodes, spleen and liver with haemorrhage in the form of ecchymoses and petechiae in the skin and mucosa.

The commonest signs which develop in the head and neck region in children are lymphadenopathy, oral petechiae and ecchymoses, gingival hyperplasia and haemorrhage.

In this case report, the history that about a year previously swellings of both parotid glands had developed, but no systemic signs were recorded. The swellings did not cause any problems or discomfort and both resolved uneventfully. Six months later a further swelling of the right parotid gland occurred which lasted for several weeks and then subsided. The swellings recurred and the 3 year old child was admitted to hospital for sialogram.

A blood count was performed followed by aspiration of bone marrow and lumbar puncture and these revealed evidence of a well differentiated acute myeloid leukaemia.

This case illustrates that swelling of the parotid glands, a symptom the dental profession may encounter, may be an early manifestation of leukaemia.

(Hobson Pamela et al., Br Dent J 155:419 Dec 1983)

ANXIETY AND DENTAL CARIES.

It is accepted that emotional stress causes various kinds of degenerative physiological changes.

In this study a correlation between dental caries, anxiety and personality was demonstrated. Children with high anxiety tended to have more dental caries, than children with low anxiety and the relations between some types of personality and dental caries were found to be statistically significant.

Present day theories of tooth decay are related to the following main factors: The effect of the ingestion of large quantities of carbohydrates: Change in saliva: Presence of *Strep. mutans* or

other acid producing bacteria and dento-bacterial plaque formation,

This study showed that dental caries is not simply caused by acid produced from acidogenic bacteria which compose plaque, but may be attributed also to an imbalance and aberration in the integrity of the host which can be caused by anxiety, other psychosomatic problems and the irregularity of life patterns.

These sociopsychosomatic factors should be taken into account when planning preventive and therapeutic dental care procedures.

(Shimura Norio et al Community Dent Oral Epidemiol. Nov 1983, 11:224-7)

ENAMEL DEMINERALIZATION TESTS WITH SOME STANDARD FOODS AND CANDIES.

It is known that dental caries is primarily the result of enamel demineralization by acids produced by bacterial fermentation of foods in the mouth. Based on this knowledge, some investigators have attempted to compare the caries producing potentials of foods by measuring the amounts of acid or enamel demineralization they produced when incubated with saliva or oral bacteria.

The most significant findings that have been confirmed by these types of tests are the absence of parallelism between the amounts of acid formed from foods and the amounts of enamel dissolved. Demineralization tests may have caries predictive value and this is suggested by the indications it gave that potato chips and starch-sugar mixtures could be actively cariogenic—findings which were subsequently shown to be true with respect to production of caries in rats.

In this experiment it was found that the test foods produced more acid than did the sucrose control, but they dissolved less enamel. This anomaly could be related to stimulation of bacterial activity by some components of food or to protection against demineralization provided buffering or coating effects of the foods or fairly specific reactions with enamel such as are known to exist with components of milk.

(Bibby B.G. et al. J Dent Res 62(8): 885-888, August 1983)

Thought.

The childhood shows the man,
As morning shows the day.

(John Milton--Paradise Regained)